UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Twin Falls District
Burley Field Office
15 East, 200 South
Burley, ID 83318
Phone: (208) 677-6600

DECISION RECORD

for the

Walker Ranch Energy Geothermal Development Project

Well Numbers: 27-30, 87-15, 42-30, 87-30, 63-31, 65-14, 32-23, 72-22, 48(52-31)-30, 27-14, 36-15, 25-29, 58-29, 32-32, 74-30, 58-12, 28-12, 77-11, 72-14, 23-13, 21-14, and 24-31 and Utilization Plan

DOI-BLM-ID-T020-2015-0016-EA

I. Decision

In reviewing the Walker Ranch Energy Geothermal Development Project Environmental Assessment (EA) (DOI-BLM-ID-T020-2015-0016-EA) and associated documents, and consulting with the Interdisciplinary Team (IDT), I have determined that the EA provided sufficient analysis to approve the Walker Ranch Energy (WRE) Plans of Operations for wells 27-30, 87-15, 42-30, 87-30, 63-31, 65-14, 32-23, 72-22, 48(52-31)-30, 27-14, 36-15, 25-29, 58-29, 32-32, 74-30, 58-12, 28-12, 77-11, 72-14, 23-13, 21-14, and 24-31. After careful consideration of all perspectives and factors, it is my decision to approve the Operations Plans for these wells as described in the Conservation Alternative with the attached Conditions of Approval (COAs) and lease stipulations. Once the exact location of each well is determined, WRE must submit cut fill diagrams and Survey Plats for each well. Once these completed items are received by the BLM the Geothermal Drilling Permits (GDPs) will be authorized.

In addition to the GDPs, WRE submitted a Utilization Plan (UP) to connect geothermal production and injection wells with a power plant that will be located on private lands adjacent to the project area via pipelines and power lines. I have concluded that the EA provided sufficient analysis to approve the UP with the attached stipulations. It is my decision to approve the UP as described in the Conservation Alternative with the attached COAs.

Rationale

The IDT analyzed three alternatives in the EA, the Proposed Action, the Conservation Alternative, and a No Action Alternative. The project proponent has geothermal leases which grant them the right to the geothermal resources within their lease areas, the

development of which is subject to conformance with the Cassia RMP as amended, the Geothermal Steam Act, National Environmental Policy Act, other regulations, policy, and applicable laws. Denying the permit applications would not meet the BLM's purpose and need because the project can be approved in accordance with the Cassia RMP and applicable laws and regulations. Denying the permits would also violate the proponents existing rights to develop the geothermal resources granted under their leases.

The Proposed Action was to implement the GDP and UP applications as submitted by Walker Ranch Energy. Project development in the Proposed Action was sited in coordination with the BLM, and included lease stipulations and voluntary design features for the protection of the environment. Through the IDTs analysis, it was determined that additional mitigation measures were needed to reduce impacts to resources and comply with the Cassia RMP as amended. Specifically, the Proposed Action would not conform to the Greater Sage-Grouse Approved Resource Management Plan Amendment (ARMPA), which amended the Cassia RMP in September 2015.

The Conservation Alternative was developed in coordination with Walker Ranch Energy and includes numerous mitigation measures, carried through this decision as COAs, that were developed as a result of scoping, resource surveys, and analysis that was conducted in the process of the EA. Additionally, it includes many environmentally beneficial design features that were proposed by the applicant. The Conservation Alternative mitigates impacts to greater sage-grouse by requiring Electric Submersible Pumps on production wells drilled within 3.1 miles of leks to reduce noise disturbance. It also required power to be run in power trays along pipelines instead of overhead transmission lines within 3.1 miles of leks and designed overhead power lines to discourage perching of avian predators and limit nesting of ravens within the project area. In order to mitigate residual impacts to sage grouse and their habitat, and to meet the mitigation requirements of the ARMPA, Walker Ranch Energy will also be required to provide 110 functional acres of compensatory mitigation. The Conservation Alternative provides additional protection for ferruginous hawks, migratory birds, and other wildlife through restricting the timing of development, limiting elevated transmission lines, limiting noise disturbance, and avoidance of special sensitive species habitats such as burrows or nests. It also includes measures to reduce potential conflicts with other user groups such as livestock grazing permitees. A full list of the COAs and lease stipulations that were developed for the protection of resources and will be attached to these permits can be found below.

Plan Conformance and Consistency

My decision is in conformance with the Cassia Resource Management Plan (RMP, 1985) as the public lands listed in the GDP applications are available for geothermal exploration and leased by Walker Ranch Energy LLC, subject to applicable regulations and Federal and State law for exploration and development. My decision also complies with the Federal Land Policy and Management Act (FLPMA) of 1976 (Public Law 94-579), the National Environmental Policy Act of 1969 (NEPA), Record of Decision and Resource Management Plan Amendments for Geothermal Leasing in the Western United States and associated Programmatic Environmental Impact Statement (Geothermal PEIS), the

Geothermal Steam Act of 1970 (30 US Code 1001-1025), the Energy Policy Act of 2005, Secretarial Order 3283, Section 7 of the Endangered Species Act (ESA) of 1973, BLM Manual 6840 – Special Status Species Management, the Migratory Bird Treaty Act, Executive Order 13186, and the Sage Grouse Approved Resource Management Plan Amendment (ARMPA) as described in Chapter 1 of the EA.

II. Finding of No Significant Impact

I have reviewed the direct, indirect and cumulative effects of the proposed activities documented in the EA (DOI-BLM-ID-T020-2015-0016-EA). Based upon this review I have determined that the Conservation Alternative, as described in the EA will not have any significant impact, individually or cumulatively, on the quality of the human environment. Because there would not be any significant impact, an environmental impact statement is not required.

Implementing regulation for NEPA (40 CFR 1508.27) provide criteria for determining the significance of the effects. Significance, as used in NEPA, requires consideration of both context and intensity as follows:

(a) Context: This requirement means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the Proposed Action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27).

The disclosure of effects in the EA found the effects limited in context. The project area is limited in size and activities are limited in potential. Effects from any construction, drilling, and operations are short-term and local in nature and would not significantly affect local, regional, or national resources. In addition, project design features and mitigation measures described in the conservation alternative will reduce impacts to resources. These are carried through as COAs and are attached to this decision.

(b) Intensity: This requirement refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following are considered in evaluating intensity (40 CFR 1508.27).

1. *Impacts that may be both beneficial and/or adverse.*

   Impacts associated with the Conservation Alternative have been identified and discussed in the Environmental Consequences section of the EA (Chapter 4). The Conservation Alternative will not have any significant adverse impacts on the resources identified and described in the EA. On

the whole, the project would result in minimal environmental impacts and result in beneficial economic and energy resource effects.

2. *The degree to which the Proposed Action affects health or safety.*

   The proposed activities will not significantly affect public health or safety. Conditions of Approval, listed in Chapter 2 of the EA and attached to this decision have been developed to mitigate potential effects on public health or safety as identified in the EA in Chapter 4, Environmental Consequences. The project and its potential effects on the human environment are not highly uncertain and do not involve unique or unknown risks.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

   The project area does not contain any, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas, and would not affect any cultural resources. (EA, Chapter 3 – Affected Environment).

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

   Effects on the human environment from drilling geothermal wells and implementing the Utilization Plan are not expected to be highly controversial. Similar activities on fee lands (U.S. Geothermal and the Department of Energy) in the same geographic area have not resulted in effects that are highly controversial.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

   Possible effects on the human environment were fully analyzed in the EA (EA, Chapter 3) and are well known and involve no unique or unknown risks. The Proposed Action is not unique or unusual.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.*

   The Walker Ranch Energy Geothermal Development Project is site-specific and has been analyzed on its own merits in the EA. Any future similar actions or actions proposed for other geothermal-related activities will be analyzed on their own merit separate from this action. The Proposed Action does not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*

   Based on the EA, no significant cumulative impacts are expected. The Proposed Action when evaluated together with other past, present, or reasonably foreseeable land disturbing activities in the area would not result in cumulatively significant impacts at the local or regional scale.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant, cultural, or historical resources.*

   Based on the environmental analysis, (EA, Chapter 3) the proposed project will not adversely affect districts, sites, highways, structures, or other objects listed or eligible for listing. Nor would the proposed project cause loss or destruction of significant scientific, cultural or historical resources.

9. *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

   As discussed in the EA, (Chapter 3) no federally listed, proposed, or candidate species under the Endangered Species Act are located in the project area or in the immediate vicinity. Therefore, there would be no impacts.

10. *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.*

    The Proposed Action does not violate any known Federal, State, or local law or requirement imposed for the protection of the environment. Furthermore, the Proposed Action is consistent with applicable land management plans, policies, and programs.

III. Appealing the Decision Record to the Interior Board of Land Appeals:

This decision may be appealed to the Interior Board of Land Appeals (IBLA), Office of the Secretary, in accordance with the regulations contained in 43 CFR 3200.5, 43 CFR, Part 4, Subpart E and Form 1842-1. Any appeal must be filed with Kenneth Crane, Burley Field Manager, Burley Field Office, 15 East 200 South, Burley, Idaho 83318 within 30 days of receipt of this decision. The appellant has the burden of showing the decision appealed is in error. The appellant shall serve a copy of the notice of appeal and any

statement of reasons, written arguments, or briefs on each adverse party named in the decision, not later than 15 days after filing such document [4.413(a)]. Failure to serve within the time required will subject the appeal to summary dismissal [4.413(b)]. If a statement of reasons for the appeal is not included with the notice, it must be filed with the IBLA, Office of Hearings and Appeals, U. S. Department of the Interior, 801 North Quincy St., Suite 300, Arlington, VA 22203 within 30 days after the notice of appeal is filed with the Burley Field Manager.

This geothermal management decision is issued under 43 CFR Part 3200.5 and is immediately effective and will remain in effect while appeals are pending unless a stay is granted in accordance with § 4.21(b) of this title. If you wish to file a petition, pursuant to regulation 43 CFR 4.21, for a stay of the effectiveness of this decision during the time your appeal is being reviewed by the Board, the petition for stay must accompany your notice of appeal. A petition for stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Office of the Solicitor
U.S. Department of Interior
University Plaza
960 Broadway Avenue, Suite 400
Boise, Idaho 83706

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether or not the public interest favors granting the stay.

Kenneth Crane
Burley Field Manager

9-13-16
Date

cc:
Walker Ranch Energy, LLC
6501 E. Belleview Ave.
Aurora, CO 80111

Conditions of Approval (COA):

Drilling Plan - The drilling plan of the Geothermal Drilling Permit will be supplemented as follows:

1. All operations shall be conducted in accordance with Geothermal Resources Order No. 2: Drilling, Completion and Spacing of Geothermal Wells. Copy attached for your reference.
2. A Hydrogen Sulfide (H2S) indicator and alarm shall be installed and operational. If H2S concentrations reach 20 ppm operations will cease until safe drilling conditions can be established and the operator has submitted a H2S contingency plan to this office for approval.
3. If a 9-5/8" contingency string is anticipated, approval is necessary prior to its use.
4. Permanent long term injection is not authorized by this permit absent other necessary authorizations or agreements, including rights-of way or unitization. Short duration (72 hours) flow tests are authorized by this permit. Longer term (i.e. up to 90 days) injection / production tests may occur after approval via sundry notice.
5. Any changes or departures from the submitted drill plan will require prior approval, including directional drilling.
6. No production interval shall be within 100 feet of a lease boundary, and no subsurface location within 50 feet of a legal subdivision boundary.
7. Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Authorized Officer (AO). All conditions of this approval shall be applicable during any operations conducted with a replacement or completion rig.
8. Daily drilling and completion progress reports shall be submitted to the Burley Field Office on a weekly basis, and shall include daily mud reports and well inclinations.
9. Submit the completion report within 30 days of completion of the well. Two copies of all logs, and a single copy of core descriptions, core analyses, drill stem tests, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling and/or completion operations shall be submitted to the BLM, Burley Field Office, at 15 East 200 South, Burley, ID 83318.

Surface Use Plan of Operations and Utilization Plan - The surface use plan of operations for the Application for Permit to Drill and Utilization Plan will be supplemented as follows:

1. This operation shall comply with applicable provisions contained in the Operations Plan, as amended July 2015. Any revisions require prior approval from the BLM.
2. The following Conditions of Approval (COAs) were developed by BLM as a result of the environmental analysis (ID-220-2015-EA-0016) or were environmental protection measures committed to by Walker Ranch, LLC in Chapter 2 of the EA that have been adopted by BLM as COAs.

I. Pre-Construction

1. Upon approval of this permit, and prior to any construction, a pre-work conference will be conducted. Attendance shall be: the operator, BLM, dirt contractor, and any other contractors which may be involved with the surface disturbance portion of this project.

2. Prior to any construction or drilling, Walker Ranch, LLC must have on file with the Idaho State BLM office a BLM- approved personal or surety bond in the amount of $10,000 for operations on a single lease, $50,000 for all of your operations within a state, or $150,000 for your operations nationwide (In accordance with 43 CFR 3261.18. Your bond must cover all record title owners, operating rights owners, operators, and any person who conducts operations on your lease (43 CFR 3214.11). Your bond must cover (43 CFR 3214.12):
    a. Any activities related to exploration, drilling, utilization, or associated operations on a Federal lease;
    b. Reclamation of the surface and other resources;
    c. Rental and royalty payments; and
    d. Compliance with the requirements of §3200.4.

3. Any changes in well location, facility location, access, or site expansion must be approved by the BLM Authorized Officer (AO) in advance. (BLM)

II. Construction, Maintenance and Operations

Construction

1. For any road sections longer than ½-mile, a 30-foot wide, 50-foot long pull out shall be constructed, to allow for safe vehicle passing, as recommended in Chapter 4 of the Gold Book, but to the lowest level of disturbance required to provide access for completion of the well. Constructed access roads crossing existing drainages may require the installation of culverts. Culvert installation will follow BLM design criteria and would be constructed pursuant to standards established in the Gold Book (USDI and USDA 2007).
2. New roads shall have a 20 foot wide area of disturbance (14 foot wide travelway and 6 foot shoulders) unless a smaller footprint is deemed to be adequate.
3. Maintenance activities including blading, surface replacement, dust abatement, spot repairs, slide removal, ditch cleaning (if ditches are needed), culvert cleaning (if culverts are necessary), litter cleanup and noxious weed control, shall be conducted as needed as needed and per Gold Book standards (USDI and USDA 2007).
4. The reserve pit shall be located in cut material, with at least 50% of the pit constructed below original ground level to prevent failure of the pit dike. Any fill dikes shall be compacted in lifts.
5. Placement of hay (straw bales) and erosion control silt fence(s) in low points shall be utilized to collect sediment that may run off the site(s). If this proves ineffective, Walker Ranch will investigate hydro-mulching as a way to stabilize exposed soils.
6. Overhead power lines shall be constructed within pipeline corridors.

7. All power lines shall provide raptor protection in compliance with the standards described in the "Suggested Practices for Raptor Protection on Power Lines, The State of the Art in 2006" (APLIC 2006).
8. Above ground facilities (i.e. pipelines, wellheads, pump motors and motor control buildings) shall each be painted "Covert Green" to blend with the area and minimize visibility. The fence constructed around each of the production well sites should also be painted an appropriate color to blend with the area.
9. All personnel shall be advised of their responsibilities under the applicable fire laws and regulations.
10. All construction and operating equipment shall be equipped with applicable exhaust spark arresters.
11. Fire extinguishers will be in all vehicles/equipment, and will be available on the site.
12. Personnel would be allowed to smoke only in designated areas.
13. The project proponent is required to ensure that mufflers are present on all diesel engines and any other components used during operations that can be muffled.
14. If cultural resources, Native American remains, funerary items, scared items, or objects of cultural patrimony are discovered, WRE shall cease operations in the vicinity of the discovery immediately, ensure adequate protection to the discovery, then notify the BLM. No activity in the vicinity of the discovery shall resume until WRE has been issued a Notice to Proceed (NTP) by the Authorized Officer.

Water Quality

1. During initial well pad and road construction and prior to completion of the final well on the well pad, pre-interim reclamation stormwater management actions shall be taken to ensure disturbed areas are quickly stabilized to control surface water flow and to protect both the disturbed and adjacent areas from erosion and siltation. This may involve construction and maintenance of temporary silt ponds, silt fences, berms, ditches, and mulching.
2. Any water bars built during construction or reclamation to divert water from ditches or roads shall be placed as follows:

Grade	Spacing
2%	Every 200 feet
2-4%	Every 100 feet
4-5%	Every 75 feet
5+%	Every 50 feet

3. Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.
4. Walker Ranch shall develop and implement a storm water pollution prevention plan during construction and operation of the project.

Vegetation, Including Noxious Weeds and Invasive Plants Impacts

1. The drilling rig and any construction-related equipment shall be cleaned and washed prior to entering each site.

2. Fill materials and road surfacing materials that originate from areas with known noxious weeds or invasive plants will not be used.
3. Re-vegetation, habitat restoration and weed control activities shall be initiated as soon as possible after construction activities are completed.
4. A weed monitoring and control program shall be implemented prior to site preparation for planting and would continue until interim or final reclamation is approved by the BLM Authorized Officer.
5. Monitoring shall be conducted at least annually during the growing season to determine the presence of any invasive plants or noxious weeds. Invasive plants and noxious weeds that have been identified during monitoring shall be promptly treated and controlled.
6. If necessary, the use of certified, weed-free mulch shall be used when stabilizing areas of disturbed soil.
7. Interim reclamation shall be initiated as soon as possible within 6 months of well completion.
8. Seeding shall be conducted no later than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix specified by BLM, is identified below, to meet reclamation standards would be used to revegetate all disturbed areas. BLM may request a different mix bases on site specific conditions or other considerations.

Table 1: Seed Mix

Species	Pounds/Acre – Pure Live Seed
Siberian Wheatgrass (P27)	5.00
Russian Wildrye (Bozoisky)	5.00
Sandberg bluegrass	2.00
Wyoming big sagebrush	0.50
Total	12.50

9. Fall seeding is preferred and shall be conducted after September 15 and prior to ground freezing for best chances of success (Shrub species should be seeded separately and would be seeded during the winter). Spring seeding shall be conducted after the frost leaves the ground and no later than April 30.
10. Initial seedbed preparation will consist of recontouring the well pads to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the topsoil. Prior to seeding, the seedbed shall be scarified and left with a rough surface.
11. If broadcast seeding is to be used, final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding and dozer tracking or another imprinting method would be used in order to loosen up the soil and create seed germination micro-sites.

Soils

1. Watering the ground shall be used to reduce dust emissions during construction.

2. Weed-free mulch, silt fencing, waddles, hay bales, and other erosion control devices shall be used on areas at risk of soil movement from wind and water erosion.
3. Mulch should be used, if necessary, to control erosion, create vegetation micro-sites, and retain soil moisture and may include hay, small-grain straw, wood fiber, live mulch, cotton, jute, or synthetic netting. Mulch shall be free from mold, fungi, and would be certified free of noxious or invasive weed seeds.
4. If straw mulch is used, it shall contain fibers long enough to facilitate crimping and provide the greatest cover.
5. All site grading shall balance cut and fill to the extent practicable to minimize potential effects from erosion
6. During initial well pad and road construction and prior to completion of the final well on the well pad, pre-interim reclamation stormwater management actions will be taken to ensure disturbed areas are quickly stabilized to control surface water flow and to protect both the disturbed and adjacent areas from erosion and siltation. This may involve construction and maintenance of temporary silt ponds, silt fences, berms, ditches, and mulching.
7. To minimize erosion from storm water runoff, access roads shall be maintained consistent with the best management practices as identified in the Gold Book (USDI and USDA 2007). BLM best management practices for storm water shall be followed, as applicable, on public lands.
8. Prior to rigging up, a berm at least one-foot high will be constructed around the perimeter of the pad to prevent escape of spilled fluids or rainfall collected on the location. This berm will be maintained during the drilling phase of the well. The need for the berm will be reassessed upon completion of the well and production is established.
9. Re-vegetation of stockpiled topsoil is required when topsoil is expected to sit for 6 months or longer to assist with erosion control.
10. If culverts are used, culvert outlets will be rip-rapped to dissipate water energy at the outlet and reduce erosion. If used, catch basins, roadway ditches, and culverts will be cleaned and maintained regularly. (BLM)

Wildlife

The following COAs were developed as a result of scoping, wildlife surveys and analysis of the project, to mitigate impacts to wildlife.

1. All construction activities shall avoid active pygmy rabbit burrow sites by a minimum of 100 meters.
2. Pre-construction surveys for pygmy rabbits in loamy sagebrush habitats shall be conducted to ensure new burrow sites are avoided.
3. Cable trays shall be used instead of overhead power lines within 3.1 miles of occupied sage-grouse leks.
4. Potentially disruptive construction activities (e.g., pad clearing, well drilling), shall be avoided within 3.1 miles of occupied sage-grouse leks from March 1 to June 30 to reduce disturbance to lekking or nesting sage-grouse (and/or hens with early

broods). If this period cannot be avoided, WRE should coordinate with the Burley Field Office to apply noise buffering shields to minimize disturbance.

5. When standing water is present in pits, pits would be required to be fenced and netted.

   Minimum Netting Requirements:

   The operator will:

   a. Construct a rigid structure made of steel tubing or wooden posts with cable strung across the pit at no more than 7-foot intervals along the X- and Y-axes to form a grid of 7-foot squares.
   b. Suspend netting a minimum of 4 to 5 feet above the pit surface.
   c. Use a maximum netting mesh size of 1½ inches to allow for snow loading while excluding most birds in accordance with Fish and Wildlife Service recommendations. Refer to: http://www.fws.gov/mountainprairie/contaminants/contaminants1c.html
   d. Cover the top and sides of the netting support frame with netting and secure the netting at the ground surface around the entire pit to prevent wildlife entry at the netting edges.
      Note: Hog wire panels or other wire mesh panels or fencing used on the sides of the netting support frame is ineffective in excluding small wildlife and songbirds unless covered by smaller meshed netting.
   e. Monitor and maintain the netting sufficiently to ensure the netting is functioning as intended, has not entrapped wildlife, and is free of holes and gaps greater than 1½ inches.

6. The operator will construct and maintain pits, cellars, open-top tanks, and trenches, that are not otherwise fenced, screened, or netted, to exclude livestock, wildlife, and humans (for example, lined, clean water pits; well cellars; or utility trenches) to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in pits, cellars, open-top tanks, or at frequent intervals along trenches where entrapment hazards may exist.
7. Power distribution lines shall be constructed in a manner which minimizes or prevents raven nesting throughout the project area.
8. Construction footprint should be minimized to the extent possible in sagebrush habitats.
9. Vegetation removal activities associated with construction is restricted from March 1 through July 15 to avoid potentially disturbing nesting migratory birds. If this period cannot be avoided, an avian survey can be completed and activities may proceed as long as nesting migratory birds are documented and avoided.
10. Portions of pipelines shall be passable by both big and small game to facilitate natural wildlife movement through the project area.
11. All or portions of 9 analysis boxes (36-15, 87-15, 27-14, 21-14, 72-14, 77-11, 28-12, 65-14 and 23-13) are within 5 kilometers (3.1 miles) of a greater sage-grouse lek. Within this 5 kilometer (3.1 mile) buffer area, power trays shall be utilized instead of overhead power lines. Power cables will be placed in trays and co-located along the geothermal pipelines (see Photo **1**). Approximately 2.5 miles to 5 miles of power cables would be placed in cable trays, and approximately 3.9 miles to 7.9 miles of power lines would be overhead.

12. Any production well operated within the 5 kilometer (3.1 mile) buffer area is required to utilize an electric submersible pump (ESP) instead of line shaft pump.

Photo 1: Typical Geothermal Pipeline with Power Cable Tray

13. Apply the protective buffers described in the February 2008 draft version of "Guidelines for Raptor Conservation in the Western United States" (Whittington and Allen 2008) to avoid adverse effects to nesting raptors. Any activities other than routine daily maintenance or field visits are required to follow procedures for processing request for exceptions on public lands in Idaho (BLM IB No. ID-2010-039).

Species	**Spatial Buffer in Non-Urban Areas**
Bald eagle[a]	0.5 to 1.0 mile
Northern goshawk	0.5 mile
Ferruginous hawk	1.0 mile
Golden eagle	0.5 mile
Peregrine falcon	1.0 mile
Red-tailed hawk	0.33 mile
Prairie falcon	0.5 mile
Swainson's hawk	0.25 mile
Burrowing owl	0.25 mile
[a] For winter roosts, a 0.25 to 1 mile buffer is recommended, depending on the degree of screening provided by vegetation or topographic features. Seasonal restrictions for potentially disruptive construction or other human activities, will generally apply for raptors from February 1 through July 31 unless an exception is granted by the BLM authorized officer.	

The following design features were added from the ARMPA because they were applicable to this project.

1. Equip tanks and other above-ground facilities with structures or devices that discourage nesting of raptors and corvids.
2. Fit transmission towers with anti-perch devices (Lammers and Collopy 2007).

Livestock Grazing

1. After the design and prior to the construction of pipelines, consult with BLM and grazing permitees to plan the placement of ramps and raised sections of pipe to facilitate livestock movement through the project area.

Safety

1. Construct pipeline road crossings in a manner that will not limit visibility on maintained roads.
2. Project personnel and contractors will be instructed and required to adhere to speed limits commensurate with road types, traffic volumes, vehicle types, and site-specific conditions, (e.g., 25 mph) to ensure safe and efficient traffic flow and to reduce wildlife collisions and disturbance and fugitive dust.

Visual Resources

1. All permanent [Onsite for six (6) months or longer] structures constructed or installed (including pumping facilities) shall be painted a flat, non-reflective earth tone color. All facilities shall be painted within six months of installation. Facilities which are required to be in compliance with Occupational Safety and Health Act (OSHA) shall be excluded. The required paint color is "Covert Green" from the Standard Environmental Colors Chart CC-001: June 2008.
2. All drill rig and well test facility lights shall be limited to those required to safely conduct the operations, and would be shielded and/or directed in a manner that focuses direct light to the immediate work area.
3. To minimize visual disturbance, facility perimeter lighting, including lighting used to illuminate walkways, roadways, staging areas and parking areas, are required be shielded so that the light would be cast in a downward direction. Low-pressure sodium lighting (or an improved technology, if readily available) is recommended be used to reduce or eliminate detrimental lighting impacts and prevent unnecessary light pollution.

Waste Management

1. All solid wastes (paper trash and garbage) must be contained in a trash cage and hauled away to an approved disposal site as necessary but no later than at the completion of drilling operations. The Operator will, on a daily basis, police the access routes and adjacent areas of the well pad to ensure that all solid wastes are deposited in the approved manner.

2. Immediately upon completion of drilling operations, the well location and surrounding area shall be cleared of all remaining debris, trash, junk and materials not required for production.
   The reserve pits shall be completely dry and all junk and debris removed before initiating any dirt work to restore the location. After drilling operations are completed, the dried liquids and solids from the reserve pits would be buried on site as part of the site reclamation.

Reclamation

1. If, upon completion of well drilling and well testing at a site, no geothermal resources have been found viable and no further exploration is to be pursued, roads and pads would be restored to their original condition by contouring and revegetating.
2. At the end of Project operations all wells shall be plugged and abandoned in accordance with Onshore Order # 2.
3. At abandonment, well pads must be contoured to match surrounding topography, ripped and seeded.
4. Pipeline reclamation shall include placing fill in the trench, compacting the fill, re-grading cut and fill slopes to restore the original contour, replacing topsoil and re-vegetating in accordance with the reclamation plan.
5. Power lines, including support structures, shall be removed and all disturbed areas reclaimed, recontoured, and seeded with a BLM approved seed mixture, and controlling noxious weeds.
6. Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet and activities will cease until the site dries out.
7. Reclamation of the roads shall include re-contouring the road back to the original contour, seeding, and controlling noxious weeds. Reclamation shall include other techniques to improve reclamation success, such as ripping, scarifying, replacing topsoil, pitting and mulching if necessary.

III. Exceptions, Waivers, and Modifications

The Authorized Officer will consider requests to modify, waive, or grant exceptions to lease stipulations and Conditions of Approval consistent with Instruction Memorandum No. 2008-032. (BLM)

IV. Compensatory Mitigation

In addition to the above COAs, to provide for a net conservation gain to the greater sage-grouse as required by ARMPA, the BFO determined that the total residual project related direct and indirect effect to sage-grouse habitat remaining after implementation of design features is equivalent to 106 acres, and that a mitigation of 110 functional acres represents a net conservation gain to the species.

BLM requires 10 functional acres of mitigation to be fully implemented or under way prior to any ground disturbance occurring. After the first year, and every year subsequent on or before January 1, BLM will re-calculate the functional acres of disturbance due to

additional project construction and make a determination of how much additional compensatory mitigation will be required before further disturbance is authorized. Any of the following compensatory methods or any combination thereof is acceptable to gain mitigation credit.

Sagebrush Planting – The BFO recommends a prescription for hand planting sagebrush seedlings within the Cottonwood burn area or other similar areas lacking sagebrush cover (see also, Burley Shrub Planting EA, EA #ID220-2009-3555). The planting will be monitored as per the Twin Falls District Fuels Monitoring Protocol, and success will be determined 1 year post planting. If successful, the planting must also be monitored as necessary to help guide future plantings. Monitoring will be contracted by WRE or conducted by BLM on a cost recoverable basis. A fully successful sagebrush planting (survival of 100 or more plants per acre after 1 year) will qualify for a credit of 0.33 acres per acre treated. If the seeding is successful at 50-100 plants per acre after 1 year, it will net 0.22 credit acres/acre. If the seeding is successful at 25-50 plants per acre after 1 year, it will net 0.11 credit acres/acre.

Habitat Restoration Partnership - This option entails partnering with the Natural Resources Conservation Service and Pheasants Forever to contribute funding to local Sage Grouse Initiative (SGI) projects on private and/or state lands. These projects typically include chainsaw cutting or masticating juniper trees in sagebrush steppe habitat, although recently some sagebrush planting projects have been implemented through the partnership.

The table below summarizes the types of treatments and credited functional acres for each treatment (see Table 2).

Table 2: Treatment Types and Functionality

Treatment Type	**Credit per Acre of Treatment (Functionality)**
Juniper Mastication (Phase 2)	1 Acre
Juniper Lop and Scatter (Phase 1)	.75 Acres
Sagebrush Planting (200 Plants per Acre)	.33

Acquisition or Conservation Easement

BLM will also consider accepting a property acquisition or a conservation easement on private lands for compensatory mitigation if the following criteria are met:

1. The acquisition or conservation easement is to be established in an area that is important to sage grouse for lekking, nesting, or brood rearing.
2. The area is threatened by development.
3. The acquisition or easement needs to be in place for the entire life of the project, ensuring that the subject lands are held for the conservation of sage grouse for the life of the project until final reclamation is complete.

The value of an acquisition or conservation easement would be determined by the functionality of the habitat, and would be measured using the Idaho BLM Interim HQT.

Federal Geothermal Lease Stipulations

Lease ID #	Lease Stipulation/Notice
35789, 35788, 35786, 37087, 36373	Protect ferruginous hawks between March 1 and July 15, prohibiting activity within the shorter of 2,000 feet or visible range of active nest sites.
35789, 35788, 35786, 37087, 36373	No exploration/development work in sage grouse strutting/brood rearing habitat from April 1-June 15.
35789, 35786, 37087, 36373	No exploration/development in crucial deer winter range December 1-March 31.
35789, 35788, 35786, 37087, 36373, 37027	Control surface disturbing activities in areas with soils that have high erosion potential.
35789, 35788, 35786, 37087, 36373, 37027	The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 USC 1531 et seq., including completion of any required procedure for conference or consultation.
35789, 35788, 35786, 37087, 36373, 37027	This lease may be found to contain previously unknown historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized, or mitigated.
37027	Bald eagles (Haliaeetus leucocephalus) and/or golden eagles (Aquila chrysaetos) may now or hereafter be found to utilize the project area. The BLM will not issue a notice to proceed for any project that is likely to result in take of bald eagles and/or golden eagles until the applicant completes its obligation under applicable

Lease ID #	Lease Stipulation/Notice
	requirements of the Eagle Act, including completion of any required procedure for coordination with the U.S. Fish and Wildlife Service or any required permit. The BLM hereby notifies the applicant that compliance with the Eagle Act is a dynamic and adaptable process which may require the applicant to conduct further analysis and mitigation following assessment of operational impacts. Any additional analysis or mitigation required to comply with the Eagle Act will be developed with the U.S. Fish and Wildlife Service and coordinated with the BLM.
37027	During project planning, the BLM and applicant/lessee will need to work closely with the U.S. Fish and Wildlife Service to incorporate appropriate provisions and protocols found in Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and other Recommendations in Support of Golden Eagle Management and Permit Issuance (Pagel et al. 2010) or more recent supplemental guidance.
37027	Controlled surface and timing limitation use near sage-grouse leks and/or nesting/early brood rearing habitat: Potentially disruptive construction activities (e.g., pad clearing, well drilling), shall be avoided within 6.4 km (~4 miles) of occupied or undetermined status sage-grouse leks from March 1 to June 30 to reduce disturbance to lekking or nesting grouse (and/or hens with early broods). Specific dates may be earlier or later, depending on local breeding chronology. The spatial buffer may be increased or decreased based on site-specific factors analyzed and documented in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) and authorized via the appropriate Decision document. For smaller-scale disturbances, (e.g., facility maintenance) a 1.0 km (0.62 mile) lek disturbance buffer will apply between approximately March 15 and May 1 from 6:00 PM to 9:00 AM in a specific area to minimize disturbance to lekking grouse (Idaho Sage-grouse Advisory Committee 2006, p. 4-70). Specific dates may be earlier or later, depending on local breeding chronology.
37027	There are a variety of BLM special status species, such as pygmy rabbit and cliff chipmunk, which may now or hereafter be found to utilize the project area. Project specific studies may be required to inventory special status species prior to any project development. Timing limitations, best management practices, and mitigation criteria may be necessary to avoid impacts to special status species. Timing limitations, best management practices, and mitigation criteria would be identified during project-specific NEPA documentation.
37027	Lands adjacent to this lease contain existing water wells. As exploration and development activities commence, the lessee may

<table>
<tr><th>Lease ID #</th><th>Lease Stipulation/Notice</th></tr>
<tr><td></td><td>be required to institute a hydrologic monitoring program commensurate with the level of activity to protect water quality and quantity.</td></tr>
<tr><td>37027</td><td>The Cassia RMP and BLM policy indicate that disturbance in proximity to raptor nests should be avoided during certain times of the year. Nest management guidelines are currently under revision by the U.S. Fish and Wildlife Service. Until these guidelines are finalized, protective buffers described in the February 2008 draft version of "Guidelines for Raptor Conservation in the Western United States" (Whittington and Allen 2008) will be used to avoid adverse effects to nesting raptors. While the draft Service guidelines provide recommended disturbance buffers for a comprehensive list of raptor species, species that are most likely to occur in or near the lease parcel are summarized below for convenience.

<table>
<tr><th>Species</th><th>Spatial Buffer in Non-Urban Areas</th></tr>
<tr><td>Bald eagle[a]</td><td>0.5 to 1.0 miles</td></tr>
<tr><td>Northern goshawk</td><td>0.5 mile</td></tr>
<tr><td>Ferruginous hawk</td><td>1.0 mile</td></tr>
<tr><td>Golden eagle</td><td>0.5 mile</td></tr>
<tr><td>Peregrine falcon</td><td>1.0 mile</td></tr>
<tr><td>Red-tailed hawk</td><td>0.33 mile</td></tr>
<tr><td>Prairie falcon</td><td>0.5 mile</td></tr>
<tr><td>Swainson's hawk</td><td>0.25 mile</td></tr>
<tr><td>Burrowing owl</td><td>0.25 mile</td></tr>
</table>
[a] For winter roosts, a 0.25 to 1 mile buffer is recommended, depending on the degree of screening provided by vegetation or topographic features.
- Seasonal restrictions for potentially disruptive construction or other human activities will generally apply for raptors from February 1 through July 31 unless an exception is granted by the BLM authorized officer.</td></tr>
<tr><td>37027</td><td>LN-1. This lease area lies within the Eastern Snake River Plain Moratorium and the Raft River Critical Ground Water Area. New consumptive uses of water are not available, which may impact geothermal exploration and development activities. Water used for drilling or development activities would likely require a temporary water appropriation and possibly the use of existing water rights. Future geothermal exploration and development drilling will require permitting through Idaho Department of Water Resources and must be done in a manner that is protective of ground water and geothermal resources in the area.</td></tr>
<tr><td>37027</td><td>LN-2. The lease area includes an existing mining Notice of Intent (NOI), filed by Hydrothermal Metals LLC, for the drilling of up to</td></tr>
</table>

Lease ID #	Lease Stipulation/Notice
	12 exploration boreholes (3 of which were completed within this geothermal lease nomination). The NOI has expired and the case will be closed pending final reclamation.